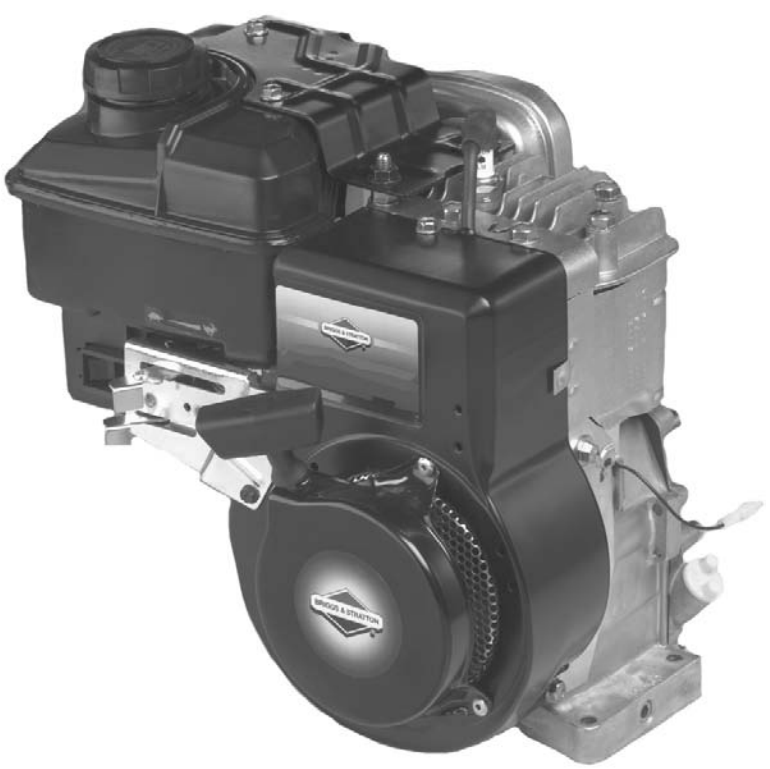
Operator's Manual

Model 90000

I/C 475/525 Series
Power Built 475/525 Series



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For replacement parts or technical assistance, record below the engine model, type, and code numbers along with the date of purchase. These numbers are located on your engine (see the "Engine Information" page).

Date of purchase: _____
MM/DD/YYYY

Engine model: _____
Model: Type: Code:

BEFORE OPERATING ENGINE

- Read entire Operating & Maintenance Instructions AND the instructions for the equipment this engine powers.*
- Failure to follow instructions could result in serious injury or death.

THE OPERATING & MAINTENANCE INSTRUCTIONS CONTAIN SAFETY INFORMATION TO

- Make you aware of hazards associated with engines
- Inform you of the risk of injury associated with those hazards, and
- Tell you how to avoid or reduce the risk of injury.

* Briggs & Stratton does not necessarily know what equipment this engine will power. For that reason, you should carefully read and understand the operating instructions for the equipment on which your engine is placed.

The safety alert symbol (⚠) is used to identify safety information about hazards that can result in personal injury.

A signal word (DANGER, WARNING, or CAUTION) is used with the alert symbol to indicate the likelihood and the potential severity of injury. In addition, a hazard symbol may be used to represent the type of hazard.

⚠ **DANGER** indicates a hazard which, if not avoided, **will result in death or serious injury.**

⚠ **WARNING** indicates a hazard which, if not avoided, **could result in death or serious injury.**

⚠ **CAUTION** indicates a hazard which, if not avoided, **might result in minor or moderate injury.**

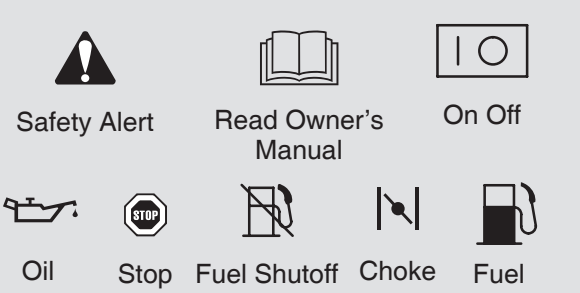
CAUTION, when used **without** the alert symbol, indicates a situation that **could result in damage to the engine.**

⚠ WARNING ⚠

The engine exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

HAZARD SYMBOLS AND MEANINGS

THE INTERNATIONAL SYMBOLS USED ON THE ENGINE OR IN THIS MANUAL INCLUDE:



WARNING

Gasoline and its vapors are extremely flammable and explosive.

Fire or explosion can cause severe burns or death.

WHEN ADDING FUEL

- Turn engine OFF and let engine cool at least 2 minutes before removing gas cap.
- Fill fuel tank outdoors or in well-ventilated area.
- Do not overfill fuel tank. Fill tank to approximately 1-1/2 inches below top of neck to allow for fuel expansion.
- Keep gasoline away from sparks, open flames, pilot lights, heat, and other ignition sources.
- Check fuel lines, tank, cap, and fittings frequently for cracks or leaks. Replace if necessary.

WHEN STARTING ENGINE

- Make sure spark plug, muffler, fuel cap and air cleaner are in place.
- Do not crank engine with spark plug removed.
- If fuel spills, wait until it evaporates before starting engine.
- If engine floods, set choke to OPEN/RUN position, place throttle in FAST and crank until engine starts.

WHEN OPERATING EQUIPMENT

- Do not tip engine or equipment at angle which causes gasoline to spill.
- Do not choke carburetor to stop engine.

WHEN TRANSPORTING EQUIPMENT

- Transport with fuel tank EMPTY or with fuel shut-off valve OFF.

WHEN STORING GASOLINE OR EQUIPMENT WITH FUEL IN TANK

- Store away from furnaces, stoves, water heaters or other appliances that have pilot light or other ignition source because they can ignite gasoline vapors.

WARNING

Starting engine creates sparking.

Sparking can ignite nearby flammable gases.

Explosion and fire could result.

- If there is natural or LP gas leakage in area, do not start engine.
- Do not use pressurized starting fluids because vapors are flammable.

WARNING

Rapid retraction of starter cord (kickback) will pull hand and arm toward engine faster than you can let go.

Broken bones, fractures, bruises or sprains could result.

- When starting engine, pull cord slowly until resistance is felt, then pull rapidly.
- Remove all external equipment/engine loads before starting engine.
- Direct coupled equipment components such as, but not limited to, blades, impellors, pulleys, sprockets, etc., must be securely attached.

WARNING

Rotating parts can contact or entangle hands, feet, hair, clothing, or accessories.

Traumatic amputation or severe laceration can result.

- Operate equipment with guards in place.
- Keep hands and feet away from rotating parts.
- Tie up long hair and remove jewelry.
- Do not wear loose-fitting clothing, dangling drawstrings or items that could become caught.

SAFETY

WARNING

Engines give off carbon monoxide, an odorless, colorless, poison gas.

Breathing carbon monoxide can cause nausea, fainting or death.

- Start and run engine outdoors.
- Do not start or run engine in enclosed area, even if doors or windows are open.

WARNING

Running engines produce heat. Engine parts, especially muffler, become extremely hot.

Severe thermal burns can occur on contact.

Combustible debris, such as leaves, grass, brush, etc. can catch fire.

- Allow muffler, engine cylinder and fins to cool before touching.
- Remove accumulated combustibles from muffler area and cylinder area.
- Install and maintain in working order a spark arrester before using equipment on forest-covered, grass-covered, brush-covered unimproved land. The state of California requires this (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal land.

WARNING

Unintentional sparking can result in fire or electric shock.

Unintentional start-up can result in entanglement, traumatic amputation, or laceration.

BEFORE PERFORMING ADJUSTMENTS OR REPAIRS

- Disconnect spark plug wire and keep it away from spark plug.
- Disconnect battery at negative terminal (only engines with electric start).

WHEN TESTING FOR SPARK

- Use approved spark plug tester.
- Do not check for spark with spark plug removed.

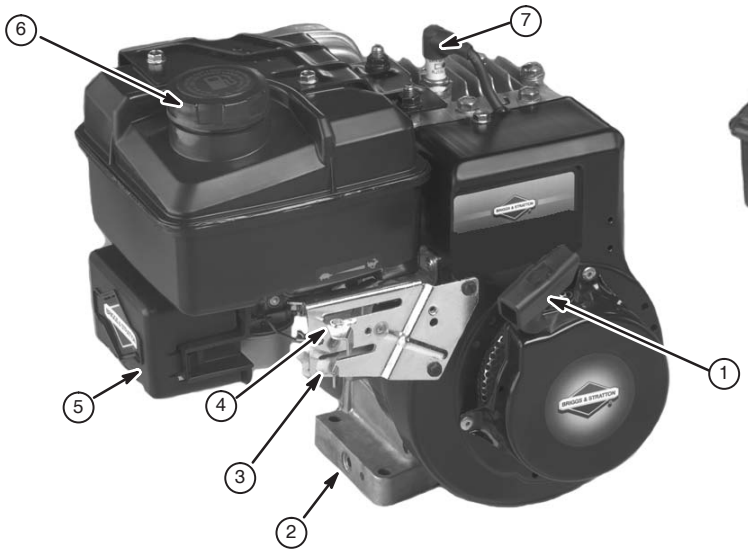
ENGINE INFORMATION

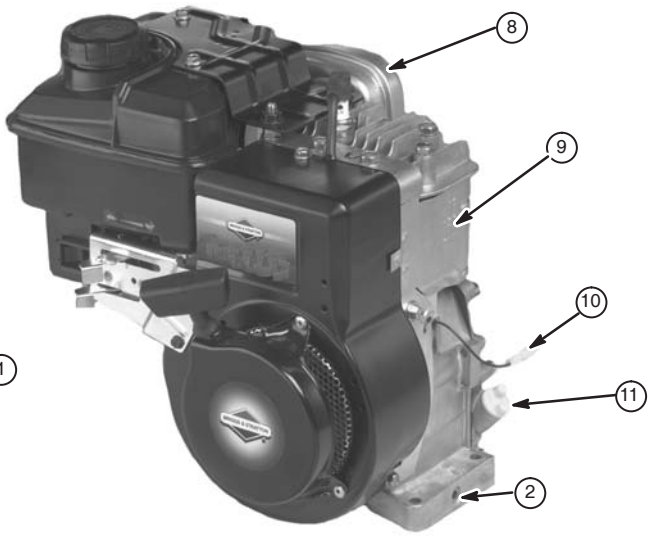
TECHNICAL INFORMATION

Engine Power Rating Information

The gross power rating for individual gas engine models is labeled in accordance with SAE (Society of Automotive Engineers) code J1940 (Small Engine Power & Torque Rating Procedure), and rating performance has been obtained and corrected in accordance with SAE J1995 (Revision 2002-05). Actual gross engine power will be lower and is affected by, among other things, ambient operating conditions and engine-to-engine variability. Given both the wide array of products on which engines are placed and the variety of environmental issues applicable to operating the equipment, the gas engine will not develop the rated gross power when used in a given piece of power equipment (actual “on-site” or net horsepower). This difference is due to a variety of factors including, but not limited to, accessories (air cleaner, exhaust, charging, cooling, carburetor, fuel pump, etc.), application limitations, ambient operating conditions (temperature, humidity, altitude), and engine-to-engine variability. Due to manufacturing and capacity limitations, Briggs & Stratton may substitute an engine of higher rated power for this Series engine.

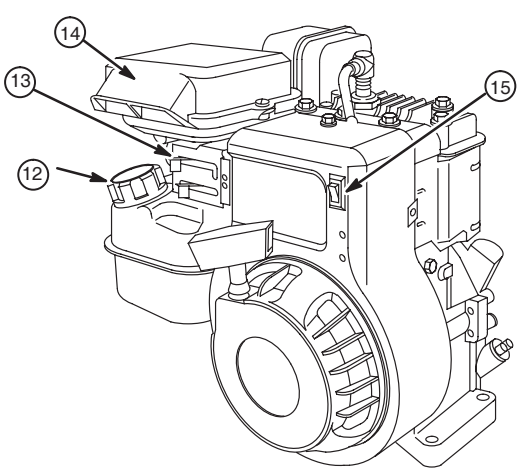
ENGINE INFORMATION





1. Rope Handle for Rewind Starter
2. Oil Drain Plug
3. Choke Control Lever
4. Throttle Lever
5. Air Cleaner
6. Fuel Tank Cap
7. Spark Plug / Spark Plug Wire
8. Muffler
9. Engine Model Type Code
xxxxx xxxx xx xxxxxxxx
10. Stop Switch Wire (if equipped)
11. Oil Fill Cap

12. Fuel Fill
13. Throttle/Choke Control
14. Air Cleaner
15. Stop Switch



GENERAL INFORMATION

ENGINE MODEL

This is a single cylinder, L-head, air-cooled engine. It is a low emissions engine.

MODEL 90000

Bore . . . . . 2-9/16 in. (65.09 mm)

Stroke . . . . . 1-3/4 in. (44.45 mm)

Displacement . . . . . 9.02 cu. in. (148.0 cc)

TUNE-UP SPECIFICATIONS

Armature air gap . . . . . 0.006 – 0.010 in. (0.15 – 0.25 mm)

Spark plug gap . . . . . 0.030 in. (0.76 mm)

Valve clearance with valve springs installed and piston 1/4 in. (6 mm) past top dead center (check when engine is cold). See Repair Manual P/N 270962.

Intake . . . . . 0.005 – 0.007 in. (0.13 – 0.18 mm)

Exhaust . . . . . 0.007 – 0.009 in. (0.18 – 0.23 mm)

For practical operation, the horsepower loading should not exceed 85% of rated horsepower. Engine power will decrease 3-1/2% for each 1,000 feet (300 meters) above sea level and 1% for each 10° F (5.6° C) above 77° F (25° C). Engine will operate satisfactorily at an angle up to 15°.

OIL

CAUTION: This engine is shipped from Briggs & Stratton **without oil**. Check oil level before starting engine. If you start the engine without oil, the engine will be damaged beyond repair and will not be covered under warranty.

Note: If this engine is equipped with gear reduction, gear reduction case must be filled with oil prior to operating engine. See gear reduction oil filling instructions on page 12.

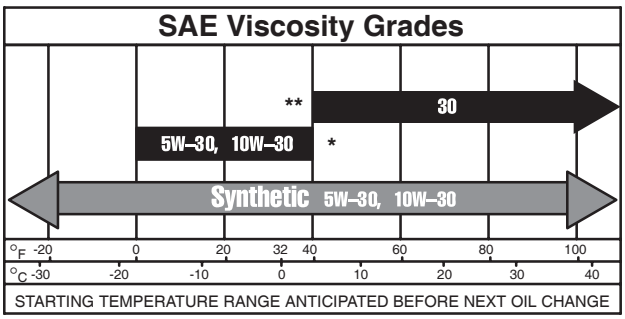
OIL CAPACITY

The engine holds approximately 2/3 qt. (21 ozs; 0.6 liter).

TYPE OF OIL TO USE

- Use a high quality detergent oil classified "For Service SF, SG, SH, SJ" or higher, such as Briggs & Stratton 30, Part Number 100005 (20 oz) or 100028 (48 oz).
- Do not use special additives.
- Choose a viscosity according to the table opposite.

Note: Synthetic oil meeting ILSAC GF-2, API certification mark and API service symbol (shown at left) with "SJ/CF ENERGY CONSERVING" or higher, is an acceptable oil at all temperatures. **Use of synthetic oil does not alter required oil change intervals**.


SAE Viscosity Grades
**
30
5W–30, 10W–30
*
Synthetic 5W–30, 10W–30
°F -20 0 20 32 40 60 80 100
°C -30 -20 -10 0 10 20 30 40
STARTING TEMPERATURE RANGE ANTICIPATED BEFORE NEXT OIL CHANGE

* **CAUTION:** Air cooled engines run hotter than automotive engines. The use of non-synthetic multi-viscosity oils (5W-30, 10W-30, etc.) in temperatures above 40° F (4° C) will result in higher than normal oil consumption. When using a multi-viscosity oil, check oil level more frequently.

** **CAUTION:** SAE 30 oil, if used below 40° F (4° C), will result in hard starting and possible engine bore damage due to inadequate lubrication.

CHECKING AND ADDING OIL

- Check oil level *before* starting the engine.
- Check level daily, or after every eight (8) hours.
- Keep oil level at FULL.
- Do not overfill.

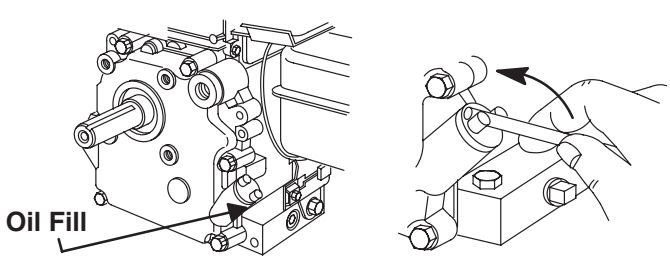
[1] Place engine level and clean around oil fill area.

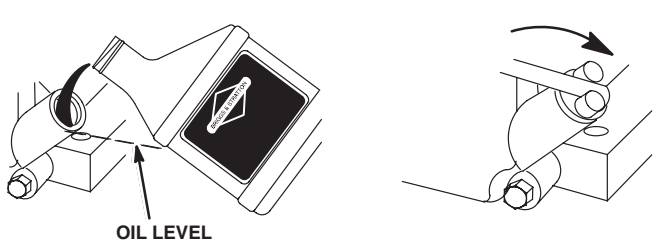
[2] Remove oil fill cap.

[3] Add oil, if needed.

[4] Pour slowly. Fill to point of overflowing.

[5] Replace and tighten oil fill cap.





FUEL

TYPE OF FUEL TO USE

- Use clean, fresh, regular unleaded gasoline with a minimum of 77 octane. Fresh fuel prevents gum from forming in the fuel system or on essential carburetor parts. Purchase fuel in quantity that can be used within 30 days.
- Do not use gasoline which contains Methanol.
- Do not mix oil with gasoline.
- For engine protection use Briggs & Stratton Gasoline Additive available from your Authorized Briggs & Stratton Dealer (P/N 5041 or single use pouch).
- This engine is certified to operate on gasoline. Exhaust Emission Control System: EM (Engine Modifications).

CAUTION: Some fuels, called oxygenated or reformulated gasoline, are gasoline blended with alcohols or ethers. Excessive amounts of these blends can damage the fuel system or cause performance problems. If any undesirable operating symptoms occur, use gasoline with a lower percentage of alcohol or ether.

ADDING FUEL

WARNING

- Fill fuel tank outdoors or in well-ventilated area, away from sparks, open flames, pilot lights, heat, and other ignition sources.
- If fuel spills, wait until it evaporates before starting engine.
- Turn engine OFF and let engine cool at least 2 minutes before removing gas cap.

[1] Remove cap. Fill tank to approximately 1/2 inch below lowest portion of fill opening to allow for fuel expansion. Be careful not to overfill.

[2] Replace cap before starting.

STARTING AND STOPPING

WARNING

- Do not use pressurized starting fluids.
- Vapors are flammable.

STARTING AND OPERATING TIPS

- Store and fuel equipment in level position.
- Use fresh fuel. (See Fuel.)
- Use correct type of oil for expected starting temperature. (See Oil.)
- Remove external equipment/engine loads. (See equipment operating instructions.)
- Periodically remove any debris buildup from the machine. (See Maintenance.)
- After engine has started, let it warm up several seconds to several minutes, depending on outside temperature.
- For maximum performance and life, operate engine with choke in RUN and throttle in FAST.

REWIND (MANUAL) STARTER

TO START ENGINE

[1] Check oil level (see p. 8).

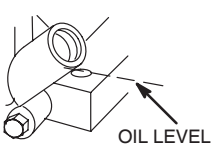
[2] Move throttle to FAST. Operate engine with throttle in FAST.

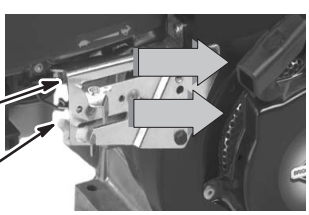
[3] Move choke control lever to CHOKE.

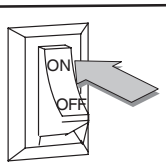
[4] Move stop switch to ON (if equipped).

[5] When starting engine, pull cord slowly until resistance is felt, then pull rapidly.

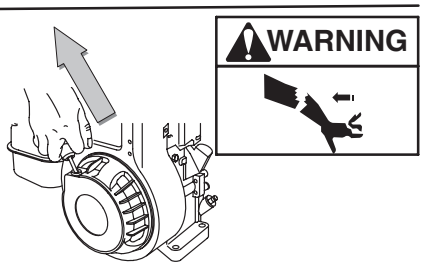
[6] Allow engine to warm up.
Adjust Choke: Slowly adjust toward RUN position. Wait until engine runs smoothly before each choke adjustment.







Stop Switch

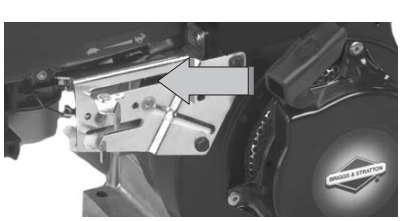


TO STOP ENGINE

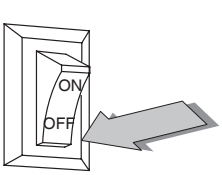
[1] Move throttle control to SLOW, then to STOP (if equipped).

[2] Push stop switch (if equipped) to OFF.

CAUTION: Do not stop engine by moving choke control to CHOKE. Backfire, fire or engine damage could occur.



Throttle



Stop Switch

MAINTENANCE

Regular maintenance will improve the performance and extend the life of the engine. See any Authorized Briggs & Stratton Dealer for service. **Use only genuine Briggs & Stratton parts. Other parts may not perform as well, may damage the engine, and may result in injury.** In addition, use of other parts may void your warranty.

EMISSION CONTROL

Maintenance, replacement or repair of the emission control devices and systems may be performed by any nonroad engine repair establishment or individual. However, to obtain no charge repairs under the terms and provisions of the Briggs & Stratton warranty statement, any service or emission control part repair or replacement must be performed by a factory authorized dealer.

Follow the instructions and schedules indicated below.

Task *Perform task at hourly or calendar interval, whichever comes first.*	Every 8 Hours or Daily	25 Hours or Every Season	50 Hours or Every Season	100 Hours or Every Season	100-300 Hours
Check Oil Level	✓				
Change Oil			✓*		
Change oil in gear reduction (if equipped)				✓	
Service air cleaner pre-cleaner (if equipped)		✓**			
Service air cleaner cartridge (if not equipped with pre-cleaner)		✓**			
Service air cleaner cartridge (if equipped with pre-cleaner)				✓**	
Inspect spark arrester (if equipped)			✓		
Replace spark plug				✓	
Clean cooling system				✓**	
Clean combustion chamber					✓

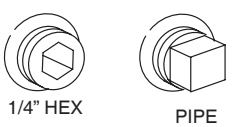
* **Change oil after first 5 to 8 hours of use**, then every 50 hours or every season. Change oil every 25 hours when operating the engine under heavy load or in high temperatures.

** Clean more often under dusty conditions or when airborne debris is present. Replace air cleaner parts, if very dirty.

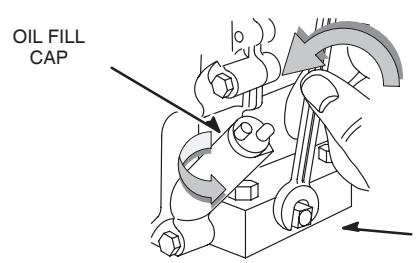
CAUTION: Used oil is a hazardous waste product. Dispose of used oil properly. Do not discard with household waste. Check with your local authorities, service center, or dealer for safe disposal/recycling facilities.

CHANGING OIL

Change oil after first 5 hours of use.



Typical Drain Plugs

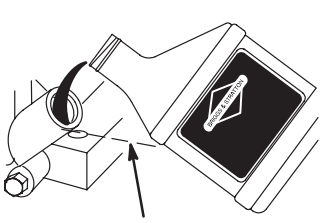


WARNING

[1] Place engine level.

[2] Place engine level. Disconnect spark plug wire and keep it away from spark plug.

[3] With engine OFF but still warm remove oil drain plug and drain oil into appropriate receptacle.



[4] Reinstall oil drain plug. Remove oil fill cap.

[5] Add about 2/3 quart (21 ounces; 0.6 liter) new oil. Fill to point of overflowing.

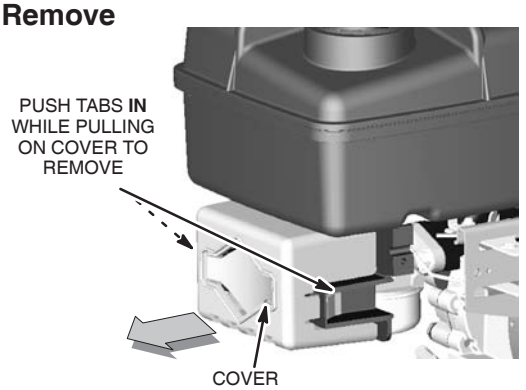
[6] Replace oil fill cap.

MAINTENANCE

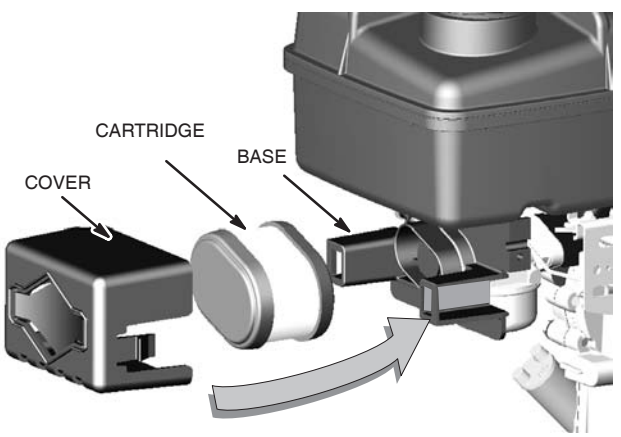
AIR CLEANER

CAUTION: Do not use pressurized air or solvents to clean cartridge. Pressurized air can damage cartridge; solvents will dissolve cartridge.

To Remove



To Install



REMOVING AND RE-INSTALLING AIR CLEANER

[1] Push in the tabs located on the sides of the air cleaner cover, while pulling cover off.

[2] Remove cartridge carefully to prevent debris from entering carburetor.

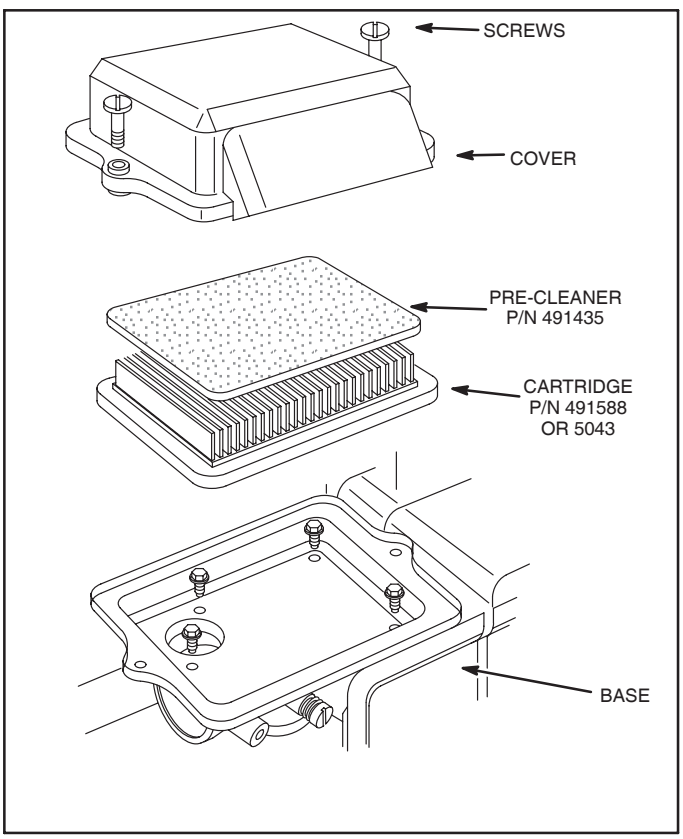
[3] Re-install new air cleaner assembly in base.

[4] Replace cover by snapping tabs back into place.

Pre-cleaner

To clean pre-cleaner (if equipped), separate it from cartridge and wash in liquid detergent and water. Air dry thoroughly. Do not oil. Re-install dry pre-cleaner on clean cartridge.

CAUTION: Do not use pressurized air or solvents to clean cartridge. Pressurized air can damage cartridge; solvents will dissolve cartridge.



REMOVING AND RE-INSTALLING AIR CLEANER

[1] Loosen screws and remove cover.

[2] Remove pre-cleaner (if equipped) and cartridge carefully to prevent debris from entering carburetor.

[3] Re-install clean (or new) air cleaner assembly in base.

[4] Replace cover and tighten screws.

ENGINE AND ENGINE PARTS

We recommend that you see an authorized Briggs & Stratton Service Dealer for all maintenance and service of the engine and engine parts. Use only genuine Briggs & Stratton parts.

WARNING

If you perform any maintenance on the engine, first disconnect the spark plug wire from the spark plug, and disconnect the battery at the negative terminal (electric starter engines only) to prevent unintentional sparking. Unintentional sparking can result in fire or electric shock. Unintentional start-up can result in entanglement, traumatic amputation or laceration. Use only correct tools.

WARNING

- Do not strike the flywheel with a hammer or hard object because the flywheel may later shatter during operation.
- Do not tamper with governor spring, links or other parts to increase engine speed.

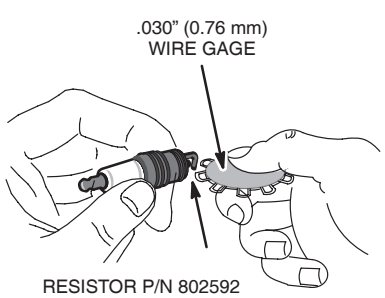
MUFFLER

Replacement parts for the muffler must be the same and installed in the same position as the original parts, otherwise fire can occur.

If muffler is equipped with spark arrestor screen, remove screen for inspection. Replace screen if damaged or plugged.

WARNING

SPARK PLUG



Note: In some areas, local law requires using resistor spark plug to suppress ignition signals. If this engine was originally equipped with resistor spark plug, use same type for replacement.

Use only Briggs & Stratton Spark Tester (part number 19368) to check for spark.

COMBUSTION DEPOSITS

We recommend that after every 100-300 hours you have an authorized Briggs & Stratton Service Dealer remove combustion deposits from the cylinder, cylinder head, top of piston, and around valves.

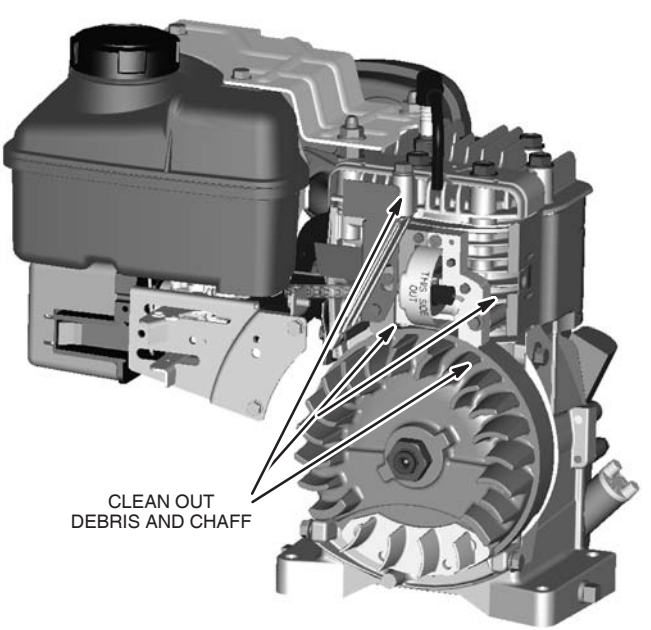
FUEL SYSTEM

Replacement parts for fuel system (cap, hoses, tanks, filters, etc.) must be the same as original parts, otherwise fire can occur.

WARNING

AIR COOLING SYSTEM

It is recommended to clean the air cooling system with blower housing removed every 100 hours.



MAINTENANCE

CLEANING DEBRIS

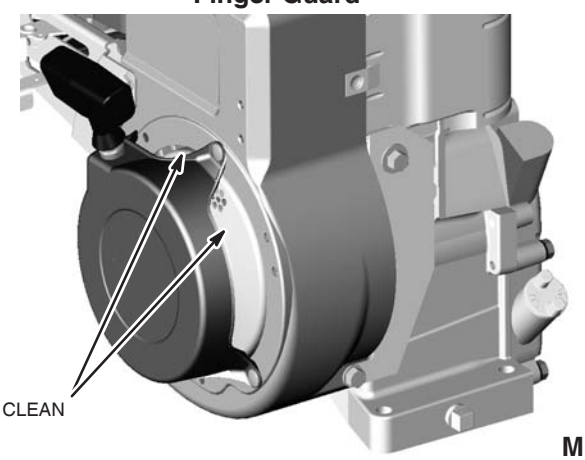
Daily or before every use, clean accumulated debris from engine. Keep linkage, spring and controls clean. Keep area around and behind muffler free of any combustible debris.

CAUTION: Do not use water to clean engine parts. Water could contaminate fuel system. Use a brush or dry cloth.

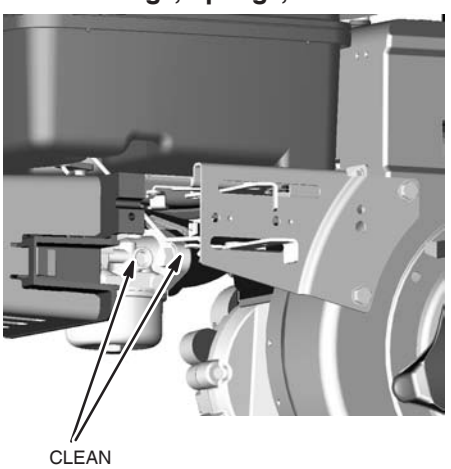
WARNING

Engine parts should be kept clean to reduce the risk of overheating and ignition of accumulated debris.

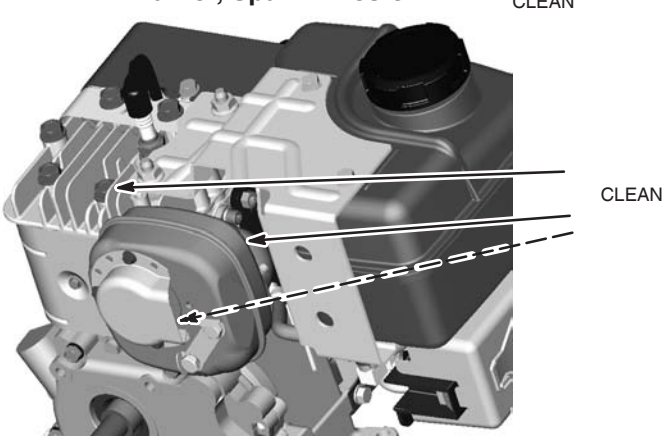
Finger Guard



Linkage, Springs, Controls



Muffler, Spark Arrester



CHANGING OIL IN GEAR REDUCTION (if equipped)

Change oil in gear reduction after every 100 hours of operation.

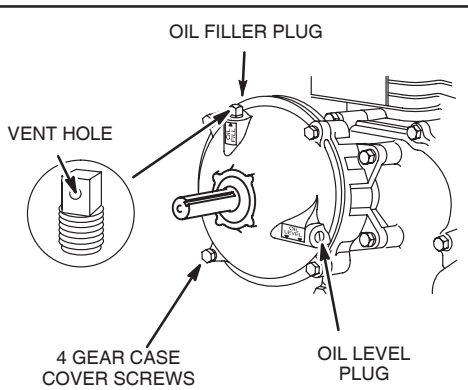
[1] To drain oil, loosen 4 gear case cover screws and drain oil into appropriate receptacle.

[2] After draining, torque 4 screws to 85 in-lbs.

[3] To refill, pour SAE 30 oil into oil fill hole until it runs out level check hole.

[4] Replace both oil plugs.

Note: Oil filler plug has a vent hole and must be installed on top of gear case cover.



SERVICE & STORAGE

SERVICE

See an Authorized Briggs & Stratton Service Dealer. Each one carries a stock of Genuine Briggs & Stratton Parts and is equipped with special service tools. Trained mechanics assure expert repair service on all Briggs & Stratton engines. Only dealers advertising as “Authorized Briggs & Stratton” are required to meet Briggs & Stratton standards.

When you purchase equipment powered by a Briggs & Stratton engine, you are assured of highly skilled, reliable service at more than 30,000 Authorized Service Dealers worldwide, including more than 6,000 Master Service Technicians. Look for these signs wherever Briggs & Stratton service is offered.

You may locate your nearest Authorized Briggs & Stratton Service Dealer in our dealer locator map on our web site **www.briggsandstratton.com** or in the “Yellow Pages™” directory under “Engines, Gasoline” or “Gasoline Engines,” or “Lawn Mowers” or similar category.

Note: Walking fingers logo and “Yellow Pages” are registered trademarks in various jurisdictions.

An illustrated shop manual includes common specifications and detailed information covering adjustment, tune-up and repair of Briggs & Stratton single cylinder, L-head, 4 cycle engines. It is available for purchase from an Authorized Briggs & Stratton Service Dealer or you can order it from the factory. Write:
Briggs & Stratton Corporation
Attn: Service Division
P. O. Box 1144
Milwaukee, WI 53201

Part No. 270962

PARTIAL LIST OF GENUINE BRIGGS & STRATTON PARTS

PART	BRIGGS & STRATTON PART NO.
Oval air cleaner cartridge	790166
Flat air cleaner cartridge	491588 -or- 5043
Flat air cleaner pre-cleaner	491435
Oil	100005 -or- 100028
Fuel Filter	298090 -or- 5018
Gas additive	5041
Resistor spark plug	802592
Standard spark plug	492167
Spark plug wrench	89838 -or- 5023
Spark tester	19368
Oil pump kit (uses standard electric drill to remove oil from engine quickly)	5056

STORAGE

Engines stored over 30 days need special attention.

[1] To prevent gum from forming in fuel system or on essential carburetor parts:
a) if fuel tank contains oxygenated or reformulated gasoline (gasoline blended with an alcohol or an ether), run engine until it stops from lack of fuel, **or** b) if fuel tank contains gasoline, either run engine until it stops from lack of fuel, or add a gasoline additive to the gas in the tank. (See parts list. Single – use pouches of gas additive are available from your service dealer.) If you use a gas additive, run the engine for several minutes to circulate the additive through the carburetor. Then, engine and fuel can be stored up to 24 months.

[2] While engine is still warm, change oil.

[3] Remove spark plug and pour about 1/2 oz. (15 ml) of engine oil into cylinder. Replace spark plug and crank slowly to distribute oil.

[4] Clean engine of surface debris, chaff or grass.

[5]

Store in a clean, dry area. Do not store in same area as a stove, furnace, water heater, or other appliance that uses a pilot light or has a device that can create a spark.

BRIGGS & STRATTON ENGINE OWNER WARRANTY POLICY

Effective 12/06

LIMITED WARRANTY

Briggs & Stratton Corporation will repair or replace, free of charge, any part(s) of the engine that is defective in material or workmanship or both. Transportation charges on product submitted for repair or replacement under this warranty must be borne by purchaser. This warranty is effective for and is subject to the time periods and conditions stated below. For warranty service, find the nearest Authorized Service Dealer in our dealer locator map at www.briggsandstratton.com, or by calling (800) 233-3723, or as listed in the 'Yellow Pages™'.

There is no other express warranty, implied warranties, including those of merchantability and fitness for a particular purpose, are limited to one year from purchase, or to the extent permitted by law any and all implied warranties are excluded. Liability for incidental or consequential damages are excluded to the extent exclusion is permitted by law. Some states or countries do not allow limitations on how long an implied warranty lasts, and some states or countries do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation and exclusion may not apply to you. This warranty gives you specific legal rights and you may also have other rights which vary from state to state and country to country.

WARRANTY TERMS **

Brand / Product Type	Consumer Use	Commercial Use
Vanguard™	2 years	2 years
Extended Life Series™, I/C®, Intek I/C®, Intek Pro™	2 years	1 year
Kerosene Fuel Operated Engines	1 year	90 days
All Other Briggs & Stratton Engines	2 years	90 days

** Engines used on Home Standby Generator applications are warranted under consumer use only. This warranty does not apply to engines on equipment used for prime power in place of a utility. **Engines used in competitive racing or on commercial or rental tracks are not warranted.**

The warranty period begins on the date of purchase by the first retail consumer or commercial end user, and continues for the period of time stated in the table above. "Consumer use" means personal residential household use by a retail consumer. "Commercial use" means all other uses, including use for commercial, income producing or rental purposes. Once an engine has experienced commercial use, it shall thereafter be considered as a commercial use engine for purposes of this warranty.

No warranty registration is necessary to obtain warranty on Briggs & Stratton Products. Save your proof of purchase receipt. If you do not provide proof of the initial purchase date at the time warranty service is requested, the manufacturing date of the product will be used to determine the warranty period.

ABOUT YOUR WARRANTY

Briggs & Stratton welcomes warranty repair and apologizes to you for being inconvenienced. Any Authorized Service Dealer may perform warranty repairs. Most warranty repairs are handled routinely, but sometimes requests for warranty service may not be appropriate. For example, warranty would not apply if engine damage occurred because of misuse, lack of routine maintenance, shipping, handling, warehousing or improper installation. Similarly, warranty is void if the serial number of the engine has been removed or the engine has been altered or modified.

If a customer differs with the decision of the Service Dealer, an investigation will be made to determine whether the warranty applies. Ask the Service Dealer to submit all supporting facts to his Distributor or the Factory for review. If the Distributor or the Factory decides that the claim is justified, the customer will be fully reimbursed for those items that are defective. To avoid misunderstanding which might occur between the customer and the Dealer, listed below are some of the causes of engine failure that the warranty does not cover.

Normal wear:

Engines, like all mechanical devices, need periodic parts service and replacement to perform well. Warranty will not cover repair when normal use has exhausted the life of a part or an engine.

Improper maintenance:

The life of an engine depends upon the conditions under which it operates, and the care it receives. Some applications, such as tillers, pumps and rotary mowers, are very often used in dusty or dirty conditions, which can cause what appears to be premature wear. Such wear, when caused by dirt, dust, spark plug cleaning grit, or other abrasive material that has entered the engine because of improper maintenance, is not covered by warranty.

This warranty covers engine related defective material and/or workmanship only, and not replacement or refund of the equipment to which the engine may be mounted. Nor does the warranty extend to repairs required because of:

1 **Problems caused by parts that are not original Briggs & Stratton parts.**

2 Equipment controls or installations that prevent starting, cause unsatisfactory engine performance, or shorten engine life. (Contact equipment manufacturer.)

3 Leaking carburetors, clogged fuel pipes, sticking valves, or other damage, caused by using contaminated or stale fuel. (Use clean, fresh, lead-free gasoline and Briggs & Stratton Fuel Stabilizer, Part No. 5041.)

4 Parts which are scored or broken because an engine was operated with insufficient or contaminated lubricating oil, or an incorrect grade of lubricating oil (check oil level daily or after every 8 hours of operation. Refill when necessary and change at recommended intervals.) OIL GARD may not shut down running engine. Engine damage may occur if oil level is not properly maintained. Read Operating & Maintenance Instructions.

5 Repair or adjustment of associated parts or assemblies such as clutches, transmissions, remote controls, etc., which are not manufactured by Briggs & Stratton.

6 Damage or wear to parts caused by dirt, which entered the engine because of improper air cleaner maintenance, re-assembly, or use of a non-original air cleaner element or cartridge. (At recommended intervals, clean and re-oil the Oil-Foam element or the foam pre-cleaner, and replace the cartridge.) Read Operating & Maintenance Instructions.

7 Parts damaged by over-speeding, or overheating caused by grass, debris, or dirt, which plugs or clogs the cooling fins, or flywheel area, or damage caused by operating the engine in a confined area without sufficient ventilation. (Clean fins on the cylinder, cylinder head and flywheel at recommended intervals.) Read Operating & Maintenance Instructions.

8 Engine or equipment parts broken by excessive vibration caused by a loose engine mounting, loose cutter blades, unbalanced blades or loose or unbalanced impellers, improper attachment of equipment to engine crankshaft, over-speeding or other abuse in operation.

9 A bent or broken crankshaft, caused by striking a solid object with the cutter blade of a rotary lawn mower, or excessive v-belt tightness.

10 Routine tune-up or adjustment of the engine.

11 Engine or engine component failure, i.e., combustion chamber, valves, valve seats, valve guides, or burned starter motor windings, caused by the use of alternate fuels such as, liquified petroleum, natural gas, altered gasolines, etc.

Warranty service is available only through service dealers which have been authorized by Briggs & Stratton Corporation. Your nearest Authorized Service Dealer is listed in the "Yellow Pages™" of your telephone directory under "Engines, Gasoline" or "Gasoline Engines," "Lawn Mowers," or similar category.

Emissions Control System Warranty Statement

Briggs & Stratton Corporation (B&S), the California Air Resources Board (CARB) and the United States Environmental Protection Agency (U.S. EPA) Emissions Control System Warranty Statement (Owner's Defect Warranty Rights and Obligations)

California, United States and Canada Emissions Control Defects Warranty Statement

The California Air Resources Board (CARB), U.S. EPA and B&S are pleased to explain the Emissions Control System Warranty on your small off-road engine (SORE). In California, new small off-road engines model year 2006 and later must be designed, built and equipped to meet the State's stringent anti-smog standards. Elsewhere in the United States, new non-road, spark-ignition engines certified for model year 1997 and later must meet similar standards set forth by the U.S. EPA. B&S must warrant the emissions control system on your engine for the periods of time listed below, provided there has been no abuse, neglect or improper maintenance of your small off-road engine.

Your emissions control system includes parts such as the carburetor, air cleaner, ignition system, fuel line, muffler and catalytic converter. Also included may be connectors and other emissions related assemblies.

Where a warrantable condition exists, B&S will repair your small off-road engine at no cost to you including diagnosis, parts and labor.

Briggs & Stratton Emissions Control Defects Warranty Coverage

Small off-road engines are warranted relative to emissions control parts defects for a period of two years, subject to provisions set forth below. If any covered part on your engine is defective, the part will be repaired or replaced by B&S.

Owner's Warranty Responsibilities

As the small off-road engine owner, you are responsible for the performance of the required maintenance listed in your Operating and Maintenance Instructions. B&S recommends that you retain all your receipts covering maintenance on your small off-road engine, but B&S cannot deny warranty solely for the lack of receipts or for your failure to ensure the performance of all scheduled maintenance.

As the small off-road engine owner, you should however be aware that B&S may deny you warranty coverage if your small off-road engine or a part has failed due to abuse, neglect, improper maintenance or unapproved modifications.

You are responsible for presenting your small off-road engine to an Authorized B&S Service Dealer as soon as a problem exists. The undisputed warranty repairs should be completed in a reasonable amount of time, not to exceed 30 days.

If you have any questions regarding your warranty rights and responsibilities, you should contact a B&S Service Representative at (414) 259-5262.

The emissions warranty is a defects warranty. Defects are judged on normal engine performance. The warranty is not related to an in-use emissions test.

Briggs & Stratton Emissions Control Defects Warranty Provisions

The following are specific provisions relative to your Emissions Control Defects Warranty Coverage. It is in addition to the B&S engine warranty for non-regulated engines found in the Operating and Maintenance Instructions.

1. Warranted Parts
   Coverage under this warranty extends only to the parts listed below (the emissions control systems parts) to the extent these parts were present on the engine purchased.
   a. Fuel Metering System
      - Cold start enrichment system (soft choke)
      - Carburetor and internal parts
      - Fuel pump
      - Fuel line, fuel line fittings, clamps
      - Fuel tank, cap and tether
      - Carbon canister

   b. Air Induction System
      - Air cleaner
      - Intake manifold
      - Purge and vent line

   c. Ignition System
      - Spark plug(s)
      - Magneto ignition system

   d. Catalyst System
      - Catalytic converter
      - Exhaust manifold
      - Air injection system or pulse valve

   e. Miscellaneous Items Used in Above Systems
      - Vacuum, temperature, position, time sensitive valves and switches
      - Connectors and assemblies
2. Length of Coverage
   B&S warrants to the initial owner and each subsequent purchaser that the Warranted Parts shall be free from defects in materials and workmanship which caused the failure of the Warranted Parts for a period of two years from the date the engine is delivered to a retail purchaser.
3. No Charge
   Repair or replacement of any Warranted Part will be performed at no charge to the owner, including diagnostic labor which leads to the determination that a Warranted Part is defective, if the diagnostic work is performed at an Authorized B&S Service Dealer. For emissions warranty service contact your nearest Authorized B&S Service Dealer as listed in the "Yellow Pages" under "Engines, Gasoline," "Gasoline Engines," "Lawn Mowers," or similar category.
4. Claims and Coverage Exclusions
   Warranty claims shall be filed in accordance with the provisions of the B&S Engine Warranty Policy. Warranty coverage shall be excluded for failures of Warranted Parts which are not original B&S parts or because of abuse, neglect or improper maintenance as set forth in the B&S Engine Warranty Policy. B&S is not liable to cover failures of Warranted Parts caused by the use of add-on, non-original, or modified parts.
5. Maintenance
   Any Warranted Part which is not scheduled for replacement as required maintenance or which is scheduled only for regular inspection to the effect of "repair or replace as necessary" shall be warranted as to defects for the warranty period. Any Warranted Part which is scheduled for replacement as required maintenance shall be warranted as to defects only for the period of time up to the first scheduled replacement for that part. Any replacement part that is equivalent in performance and durability may be used in the performance of any maintenance or repairs. The owner is responsible for the performance of all required maintenance, as defined in the B&S Operating and Maintenance Instructions.
6. Consequential Coverage
   Coverage hereunder shall extend to the failure of any engine components caused by the failure of any Warranted Part still under warranty.

Look For Relevant Emissions Durability Period and Air Index Information On Your Engine Emissions Label

Engines that are certified to meet the California Air Resources Board (CARB) Tier 2 Emissions Standard must display information regarding the Emissions Durability Period and the Air Index. Briggs & Stratton makes this information available to the consumer on our emissions labels. The engine emissions label will indicate certification information.

The **Emissions Durability Period** describes the number of hours of actual running time for which the engine is certified to be emissions compliant, assuming proper maintenance in accordance with the Operating & Maintenance Instructions. The following categories are used:

Moderate:
Engine is certified to be emissions compliant for 125 hours of actual engine running time.

Intermediate:
Engine is certified to be emissions compliant for 250 hours of actual engine running time.

Extended:
Engine is certified to be emissions compliant for 500 hours of actual engine running time. For example, a typical walk-behind lawn mower is used 20 to 25 hours per year. Therefore, the **Emissions Durability Period** of an engine with an **intermediate** rating would equate to 10 to 12 years.

Certain Briggs & Stratton engines will be certified to meet the United States Environmental Protection Agency (USEPA) Phase 2 emissions standards. For Phase 2 certified engines, the Emissions Compliance Period referred to on the Emissions Compliance label indicates the number of operating hours for which the engine has been shown to meet Federal emissions requirements.

For engines less than 225 cc displacement.
Category C = 125 hours
Category B = 250 hours
Category A = 500 hours

For engines of 225 cc or more displacement.
Category C = 250 hours
Category B = 500 hours
Category A = 1000 hours

Briggs & Stratton Engines Are Made Under One Or More Of The Following Patents: Design D-247,177 (Other Patents Pending)

6,691,683	6,520,141	6,325,036	6,145,487	6,012,420	5,803,035	5,548,955	5,243,878	5,138,996	4,875,448	D 476,629
6,647,942	6,495,267	6,311,663	6,142,257	5,992,367	5,765,713	5,546,901	5,235,943	5,086,890	4,819,593	D 457,891
6,622,683	6,494,175	6,284,123	6,135,426	5,904,124	5,732,555	5,445,014	5,234,038	5,070,829	4,720,638	D 368,187
6,615,787	6,472,790	6,263,852	6,116,212	5,894,715	5,645,025	5,503,125	5,228,487	5,058,544	4,719,682	D 375,963
6,617,725	6,460,502	6,260,529	6,105,548	5,887,678	5,642,701	5,501,203	5,197,426	5,040,644	4,633,556	D 309,457
6,603,227	6,456,515	6,242,828	6,347,614	5,852,951	5,628,352	5,497,679	5,197,425	5,009,208	4,630,498	D 372,871
6,595,897	6,382,166	6,239,709	6,082,323	5,843,345	5,619,845	5,320,795	5,197,422	4,996,956	4,522,080	D 361,771
6,595,176	6,369,532	6,237,555	6,077,063	5,823,153	5,606,948	5,301,643	5,191,864	4,977,879	4,520,288	D 356,951
6,584,964	6,356,003	6,230,678	6,064,027	5,819,513	5,606,851	5,271,363	5,188,069	4,977,877	4,512,499	D 309,457
6,557,833	6,349,688	6,213,083	6,040,767	5,813,384	5,605,130	5,269,713	5,186,142	4,971,219	4,453,507	D 308,872
6,542,074	6,347,614	6,202,616	6,014,808	5,809,958	5,497,679	5,265,700	5,150,674	4,895,119	4,430,984	D 308,871